MASS. HS30.2:P96/Mos.

PUBLIC HEALTH FACT SHEET

Mosquito Repellents

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Massachusetts Department of Public [illegible] Boston, MA 02111

How Can I Reduce My Exposure to Mosquitoes?

- Eliminate backyard mosquito breeding areas by preventing the collection of standing water in old tires, buckets, gutters or toddler swimming pools.
- Repair and securely fasten all screens on the doors and windows of your home.
- Avoid outdoor activity during peak hours of mosquito feeding in the early morning and early evening..
- Wear long-sleeved shirts and long pants if outdoors during hours of high mosquito activity.

Should I Take Additional Precautions to Protect My Children?

Infants are especially susceptible to mosquito bites when outdoors due to their limited mobility and inability to swat landing insects. The Department recommends that you use mosquito netting to cover infant carriages and playpens when outdoors.

Children should be encouraged to remain indoors during hours of peak mosquito activity. If outdoors during these times, children should wear long-sleeved clothing and long pants.

Should I Use a Mosquito Repellant?

If these personal precautions do not sufficiently reduce your exposure to mosquitoes or if you live in an area of high risk for the mosquito-borne viral disease Eastern Equine Encephalitis, you may want to consider a mosquito repellent for additional protection.

What Are Mosquito Repellents?

Repellents are chemical compounds that are applied to the clothing and/or exposed skin to prevent mosquito bites. Commercial repellents come in a variety of forms: spray, liquid, lotion, stick and pre-moistened towelettes.

What Types of Mosquito Repellents are Available?

The most common and effective insect repellents for outdoor use are those that contain the active ingredient N-N-diethyl-meta-toluamide or DEET. They are available in varying concentrations ranging from 7 1/2% to 100% DEET and when applied according to the manufacturers' directions, repel mosquitos for several hours. Products containing low concentrations of DEET, 15% or less, are preferable for use on children and for backyard environments. Products containing more than 30% DEET are not recommended. Products with less than 30% DEET should provide adequate protection for adults. Commercial repellents that contain greater concentrations of DEET are intended for deep woods environments where additional personal protection is required and are not recommended for use on children.

Other commercially available repellents contain oil of citronella, 2-ethyl-1, 3-hexanediol ("Rutgers 612") or dimethyl phthalate. These products provide moderate protection against mosquito bites. A commercial concentrated bath oil, Avon Skin-So-Soft has also come into wide use a "folk medicine" mosquito repellant; however, tests of this product indicate its repellent properties are weak and short-lived (as little as 10 to 30 minutes).

Proper use of mosquito repellents can provide protection; however, human toxicity has been noted for most of these products and caution should be exercised when using them. Illness is most frequently associated with overuse of or hypersensitivity to the repellent.

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How Should I Apply a Mosquito Repellent?

Always read the product label before applying a mosquito repellent. Even if you have used the product in the past, it is important to reread the directions regarding the suggested application frequency and amount of repellent to use. Never exceed the manufacturers' recommendation for application.

Apply the repellent as directed to clothing or exposed skin only. Do not use mosquito repellent under your clothing. Avoid applying any mosquito repellent near your eyes or mouth, to cuts, wounds or irritated skin, or to the hands of young children.

Always wash your hands with warm soapy water after applying a mosquito repellent. After returning indoors, wash treated skin with soap and water and bathe. This is especially important when repellents are used repeatedly in a day or on consecutive days.

What Precautions Should I Take When Using a Mosquito Repellent?

- **Never exceed the manufacturers suggested application rate.**

  Repellents may be absorbed through the skin and cause acute illness. The Environmental Protection Agency (EPA) has received a small number of reports of adverse reaction following repeated topical application of products containing DEET. The symptoms which were most common in small children, are: headache, mood changes, crying, irritability, confusion and nausea. In more severe cases, muscle spasms, convulsions, and unconsciousness were also noted. While DEET has not been confirmed as the cause of the reactions, EPA is concerned that a small segment of the population may be sensitive to DEET.

- **Always keep mosquito repellents out of the reach of children.**

  Ingestion of products containing DEET has resulted in acute toxicity characterized by low blood pressure, seizures and unconsciousness. Most toxic episodes were the result of deliberate ingestion of the product or accidental ingestion by children. However, toxic reactions have been reported as the result of incidental ingestion due to DEET contamination of the individual's hands.

- Mosquito repellents should not be used by sensitive populations or individuals.

  The Department does not recommend the use of mosquito repellents by pregnant women or infants and suggests limited use by children. The EPA is concerned that some percentage of the general population may be sensitive to DEET containing repellents. If you've experienced an allergic or toxic reaction to a DEET product, refrain from further use of all products that contain the active ingredient DEET.

What Should I do if I'm Having a Toxic Reaction To a Mosquito Repellent?

Wash the treated skin then call the local poison control center. In Massachusetts the number is (617) 232-2120. If and when you go to the doctor, take the repellent with you. The label information may be useful to your physician.

If you or your doctor need specific medical information about the active ingredient in the repellent or other pesticides, call the National Pesticide Telecommunications Network at (800) 858-7378. NPTN operates 24 hours a day, seven days a week.

For More Information:

Massachusetts Department of Public Health
State Laboratory Institute (617) 522-3700, X420 (information on EE in Massachusetts, and consultations for doctors and hospitals on EE symptoms and treatment) X 208 (information on laboratory results)
Environmental Health Assessment (617) 727-7170 (information on larvicides and adulticides)
Massachusetts Department of Food and Agriculture
State Reclamation and Mosquito Control (617) 727-3035 (information on regional mosquito control programs)
Division of Animal Health (617) 727-3015 (information on horse vaccine)
Area mosquito control districts: Oscar Doane, Cape Cod Mosquito Control, (508) 775-1510; Alan DeCastro, Bristol Mosquito Control, (508) 823-5253; David Henley, East Middlesex Mosquito Control, (617) 899-5730; James Jurgenson, Berkshire Mosquito Control, (413) 447-9808; Bruce Landers, Suffolk County Mosquito Control, (617) 361-4954; Dr. Kenneth Ludlam, Plymouth Mosquito Control, (617) 585-5450; Walter Montgomery, Essex Mosquito Control, (508) 948-2381; David Scott, Central Mass Mosquito Control, (508) 393-3055; John Smith, Norfolk Mosquito Control, (617) 762-3681.

Your local board of health: Listed in the telephone book under local government.

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